Efficacy and Safety of Dual Antiplatelet Therapy Versus Direct Oral Anticoagulant Following Left Atrial Appendage Closure: A Systematic Review and Meta-Analysis

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Background: Percutaneous left atrial appendage occlusion (LAAO) offers a nonpharmacologic strategy for stroke prevention in patients with atrial fibrillation, however it carries the risk of device thrombosis. Current guidelines recommend oral anticoagulant for 45 days, followed by dual antiplatelet therapy (DAPT) for 6 months. However, given the high bleeding risk in this population, studies have been done comparing DAPT to direct oral anticoagulants (DOAC) following LAAO.

Methods: We performed a literature search using PubMed, Embase, and Cochrane Library from inception through February 2022 to investigate the efficacy and safety of DAPT compared to DOAC in patients following LAAO. The primary outcome was all-cause mortality and secondary outcomes were ischemic stroke, device related thrombosis, and major bleeding.

Results: A total of three studies including 400 patients (150 patients received DOAC and 250 received DAPT) were included. All-cause mortality was significantly higher in the DAPT group compared to the DOAC group (RR 2.29, 95% CI 1.31-4.01, P=0.004). The rates of DRT (RR 4.82, 95% CI 0.60-38.89, P=0.14), ischemic stroke (RR 1.23, 95% CI 0.38-4.05, P=0.73), and major bleeding (RR 1.34, 95% CI 0.50-3.65, P=0.56) were numerically lower in the DOAC group compared to DAPT group, although the differences did not reach statistical significance.

Conclusion: Our study demonstrated the superiority of DOACs vs. DAPT following LAAO in terms of all-cause mortality. DOACs had lower DRT, ischemic stroke, and major bleeding trends compared to

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DAPTs but the differences were not statistically significant. Large-scale trials comparing DOAC and DAPT are necessary to validate our findings.

